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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,107

04/20/2006

Mireille Seux

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EXAMINER

KESSLER, CHRISTOPHER S

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

06/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,107	Applicant(s) SEUX ET AL.	
	Examiner CHRISTOPHER KESSLER	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>13 July 2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because there are typographical errors present. The “=” signs should be represented as “≤” or “≥” as is consistent with the rest of the disclosure. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: in the Example, the composition is listed as comprising 0.78% carbon, which is outside the range disclosed in the Abstract, Description of the Preferred Embodiments, Claims, etc. It is believed by the Examiner that this is merely a typographical error.

Appropriate correction is required.

Claim Objections

3. Claims 4-10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,472,208 issued to Kunishige (hereinafter "Kunishige") in view of US Patent 6,264,760 issued to Tamehiro et al. (hereinafter "Tamehiro").

Regarding claim 1, Kunishige teaches the invention substantially as claimed. Kunishige teaches a steel having a composition of C: 0.05-0.20 wt %, Si: not more than 1.2 wt %, Mn: 0.5-2.0 wt %, Ti: 0.04-0.20 wt %, P: not more than 0.025 wt %, S: not more than 0.015 wt %, sol. Al: 0.005-0.15 wt %, O: not more than 0.0080 wt %, N: not more than 0.0080 wt %, B: 0-0.0030 wt %, Cr: 0-1.0 wt %, Ca: 0-0.010 wt % (see Summary of the Invention). The composition taught by Kunishige significantly

overlaps the instantly claimed compositional ranges, establishing a prima face case of obviousness for those ranges. It would have been obvious to one of ordinary skill in the art at time of invention to have made a steel with a composition within the range as claimed, because Kunishige teaches a steel with a composition overlapping the instantly claimed range. Applicant is further directed to MPEP 2144.05.

Kunishige does not teach wherein the steel has a bainitic-martensitic structure with up to 5% ferrite. Kunishige teaches wherein the steel has a bainitic-ferritic structure (see abstract, cols. 4-5 for example).

Tamehiro teaches an ultra-high strength steel with a structure comprising predominantly fine grain bainite and martensite (see abstract). Tamehiro teaches that the bainite and martensite comprise at least about 90% of the structure of the steel (see col. 19). Tamehiro teaches that the steel is prepared by a process comprising hot rolling in the temperature range of 950-700° C and cooling at a high rate to a temperature between 450-200° C (see cols. 21-22). Tamehiro teaches that this method imparts ultra-low temperature toughness into the steel along with high tensile strength (see cols. 19-21).

It would have been obvious to one of ordinary skill in the art to have applied the method of Tamehiro to the alloy of Kunishige because Tamehiro teaches that the method imparts ultra-low temperature toughness into the steel along with high tensile strength (see cols. 19-21).

Regarding the limitation of the amount of ferrite present, Tamehiro teaches that the bainite and martensite comprise at least about 90% of the structure of the steel and the rest is one or more of ferrite, twinned martensite, or upper bainite (see col. 19), said composition overlapping the claimed range, establishing a prima facie case of obviousness for that range. Further, the similar process applied to the similar composition as claimed must inherently yield the same results. Applicant is further directed to MPEP 2112.01.

Regarding claim 2, Kunishige in view of Tamehiro is applied to the claim as stated above. The composition taught by Kunishige significantly overlaps the instantly claimed compositional ranges, establishing a prima facie case of obviousness for those ranges. It would have been obvious to one of ordinary skill in the art at time of invention to have made a steel with a composition within the range as claimed, because Kunishige teaches a steel with a composition overlapping the instantly claimed range. Applicant is further directed to MPEP 2144.05.

Regarding claim 3, Tamehiro teaches wherein the steel preferably contains at least 90% bainite-martensite, with preferably at least $\frac{3}{4}$ of bainite, said range overlapping the instantly claimed range and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have produced a steel with an amount of bainite and martensite as claimed because Tamehiro teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 4,407,680 teaches that a substantially bainitic structured steel is heated into the austenitic range and converted into martensite through intercritical annealing to impart a high level of ductility and strength in the steel (see col. 1).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KESSLER whose telephone number is (571)272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

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